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Abstract

When given opportunities for personal glory in individual settings, people high in narcissism excel. However, less is known about narcissists' influence in team contexts. Across two studies (utilizing cross-sectional and two-wave longitudinal designs) involving 706 athletes from 68 teams in total, we tested a conceptual model linking narcissism to task cohesion, via intragroup conflict, moderated by narcissistic group composition. We tested a new sports-oriented measure of intragroup conflict using Bayesian estimation and evaluated our theorizing using a multilevel conditional indirect effect hybrid model. Across both studies, we found that narcissism influenced perceptions of task cohesion via process conflict only; with a negative influence at low narcissistic group composition that was weakened (Study 1) or nullified (Study 2) at high narcissistic team composition. Collectively, these findings offer the first example of how narcissism influences task cohesion in team settings and the contextual effects of narcissistic group composition.

Keywords: Narcissism, team personality, intragroup conflict, Bayesian estimation

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Narcissism, in its grandiose and agentic form, reflects a disposition to be dominant, entitled, self-centered, and to possess a manipulative interpersonal orientation (Morf et al., 2011).[1] It has been the focus of increased research attention within sport and performance settings (see Roberts et al., 2018 for a review) with considerable evidence that the behaviors of those high in narcissism are dependent on perceived opportunities for personal glory (or self-enhancement). These investigations, however, have focused on individual narcissism only. Consequently, the influence of narcissism in team settings is poorly understood (although see Benson et al., 2016, Study 4, for an exception).

Within team settings, it is likely that narcissists' motivation to gain superiority and their myopic focus on the self can be detrimental to teams. Indeed, the limited investigations within team settings support this position; narcissists become more hostile toward teammates and more unpopular within teams across time (Leckelt et al., 2015; Ong et al., 2016). However, beyond these initial forays, little is known about how narcissism influences team outcomes. To understand how personality influences group outcomes most research adopts an input-process-output (IPO) framework (e.g., LePine et al., 2011). In IPO frameworks, inputs (e.g., personality) impact the processes that teammates engage in, which in turn influence outputs. For example, O'Neill and Allen (2014) found that psychopathy (input) influenced team conflict resolution (process), which subsequently impacted team performance (output). However, the utilization of an IPO conceptual framework for investigating personality generally, and narcissism more specifically, within the sports domain remains untested. Thus, in the present study we examine narcissism within an IPO framework and examine its influence on cohesion.

Cohesion is often viewed as the most important small group variable (Lott & Lott, 1965). In sport team research, cohesion comprises two aspects: task and social cohesion

(Carron et al., 1985). In this research we focus specifically on task cohesion. Indeed, the present research focusses on *agentic* and *grandiose* narcissism whereby individuals high in this type of narcissism satisfy their core self-motives (i.e., grandiosity) through task-oriented displays of competency. Thus, task cohesion - which refers to the bonding and closeness of a team regarding performance-related goals – has particular relevance to agentic forms of narcissism. Conversely, perceptions of social cohesion (e.g., the closeness of emotional bonds with team members) are less applicable to agentic forms of narcissism, as displays of close emotional bonds do not afford the opportunity to self-enhance.

To complete our IPO framework, we conceptualize intragroup conflict as a process-type variable; intragroup conflict impacts the unity and bonding around team goals (de Wit et al., 2012). Conflict is also a product of the antagonistic disposition of narcissism. In the following sections, we expand on types of intragroup conflict, and we propose a conceptual IPO model of narcissism, conflict, and task cohesion, which we test across two studies. Furthermore, underpinned by Trait Activation Theory (Tett & Guterman, 2000), we also propose and test an extension to the IPO framework in our model, which includes the moderating effect of team narcissism on the narcissism-conflict-task cohesion relationship. The overall conceptual model is displayed in Figure 1.

Intragroup conflict

Initially, it is worth noting a distinction between conflict *processes* (i.e., how teams and individuals manage and attempt to resolve conflict) and conflict *states* (i.e., the nature of disagreements such as cognitive or emotional issues, DeChurch et al., 2013). Whilst both are valid approaches to investigating conflict, the focus of the present research is on conflict *states*; that is, the type of disagreement between team members. To this end, the literature distinguishes between three types of conflict (de Wit et al., 2012): *relationship conflict* involves disagreements about interpersonal issues, such as personal values; *task conflict*

includes arguments about the task outcomes for the team; and *process conflict* is concerned with disagreements regarding how to approach the task, such as team member roles and responsibilities. Meta-analyses have consistently shown negative relationships between intragroup conflict and a variety of indices of team functioning (e.g., commitment, trust, and cohesion; de Dreu & Weingart, 2003; de Wit et al., 2012).

Despite the utility of considering the aforementioned three conflict types and their demonstrated impact on teams, there is inconsistency in the uptake of this approach in the sport literature. For example, some studies have only investigated a single conflict type, such as task conflict (Leo et al., 2015), or have explored alternative conceptualizations of intragroup conflict based on conflict-affected environments (Paradis et al., 2014). Consequently, incomplete conceptualizations of intragroup conflict impede our understanding of this rich vein of research in sports settings. One possible explanation for the limited research on conflict in sport is the lack of an appropriate sport-specific measure that assesses the three types of conflict. To resolve this issue, in Study 1 we developed a sport-specific conflict scale encompassing the three types of conflict (relationship, task, and process conflict) to enable us to investigate the associations between narcissism and task cohesion via intragroup conflict.

Conceptual model

Our extended IPO framework examines how narcissism indirectly influences task cohesion via intragroup conflict, with perceptions of team narcissism moderating this relationship. In order to understand the precise nature of these relationships, first we discuss the simple indirect effects of narcissism on task cohesion, via the three intragroup conflict types. Second, we explain how perceptions of team narcissism moderate these indirect effects.

Simple indirect effects

One would expect narcissism to negatively impact task cohesion via intragroup conflict. To expand, those high in narcissism generally lack consideration for others (Wai & Tiliopoulos, 2012), which leads to increased arguments around personal values (relationship conflict). As such individuals high in narcissism are likely to experience more relationship conflict in their team. Greater relationship conflict within the team will then lead to perceptions of less task cohesion (de Wit et al., 2012). Similar effects are likely for process conflict. Process conflict centers on roles and responsibilities and consequently, personal competency. Thus, since narcissists perceive these as challenges to their personal competency - a central component to narcissists' *raison d'être* (Zeigler-Hill et al., 2017) - they then perceive more process conflict in their team. Process conflict is also negatively associated with cohesion (de Wit et al., 2012). Thus, via process conflict, narcissist's perception of task cohesion is also negative. In contrast to relationship and process conflict, task conflict does not necessarily influence cohesion (de Wit et al., 2012). Consequently, even though one might expect narcissism to predict perceptions of task conflict, as narcissists may well disagree with teammates about team tasks and roles (as they are focused on their own aims to self-enhance at the expense of the group), task conflict will not affect cohesion. As such, it is unlikely that narcissism will impact task cohesion via task conflict. In summary, we expect narcissism indirectly impacts perceived task cohesion negatively through relationship and process conflict, but not through task conflict. In the following section, we develop these hypotheses further with the inclusion of perceptions of team narcissism as a moderator of these indirect effects.

Team narcissism as a moderator

Embedded within Trait Activation Theory (Tett & Gutermann, 2000), individuals' standing on a trait *and* the corresponding behaviors are activated by situational cues in their environment. These cues are found at task, social, and organizational levels and moderate the

relationship between an individual's personality and outcomes. In a team setting, the personality composition of the team (the makeup of a team on a given trait, such as the average score or number of individuals who possess a trait) provides cues which likely moderates the relationship between individual levels of a trait and particular outcomes (cf. Schmidt et al., 2012; Tett & Burnett, 2003). Put simply, a narcissistic individual may behave differently in a team comprising more versus fewer narcissistic individuals. Interestingly, despite their lack of empathy and self-focus, narcissists (vs. non-narcissists) dislike their narcissistic counterparts less than those lower in narcissism (Burton et al., 2017; Wallace et al., 2015). Indeed, the *narcissistic-tolerance hypothesis* suggests that narcissists are more likely to interpret other narcissists' actions in a less negative light, as they share the same core motives. Thus, narcissistic individuals tolerate the more undesirable behaviors of other narcissists (Burton et al., 2017). Extending this rationale to teams, individuals high in narcissism who perceive themselves to be in a team consisting of a relatively high number of narcissists are more likely to tolerate the views and behaviors of those who are similar. As such, they will likely disagree less with teammates and perceive less intragroup conflict. In contrast, a narcissistic individual in a team of relatively few perceived narcissists is likely to view others less favorably, as teammates are perceived as social rivals (or incompetent) due to their lack of similar core values (Back et al., 2013). The resulting reaction by narcissistic individuals is to defend their perceived superior status by behaving aggressively to sources of rivalry, in turn leading to more intragroup conflict. Considering this theorizing in relation to the indirect effects proposed earlier, in teams consisting of (relatively) few perceived narcissistic individuals, we expected narcissism to impact task cohesion negatively via relationship conflict and process conflict. However, as the number of perceived narcissistic individuals in the team increases, we expected the negative effect of narcissism on task cohesion through relationship and process conflict to be attenuated. Finally, we expected

narcissism to have no relationship with task cohesion via task conflict regardless of the composition of narcissism within the team.

Overview

To summarize, in this research we offer a highly original examination of the influence of narcissism on task cohesion, via three intragroup conflict types, moderated by team narcissism. Our conceptual model is embedded within an extended IPO framework drawing from Trait Activation Theory principles (see Figure 1) and offers several advances for team personality research. For example, we consider the level of the individual in teams, which has often been neglected in team personality research. Additionally, we test our model across two separate samples and research designs, utilizing a cross-sectional and a two-wave longitudinal design. Furthermore, we test our team personality moderator against a traditional perspective in team personality research (team mean narcissism), which is also outlined in Figure 1. In both studies, we hypothesized that narcissism would have a negative indirect effect on task cohesion via relationship and process conflict (not via task conflict), at low narcissistic group composition, with the effect attenuated at high narcissistic group composition.

Study 1

Participants

We recruited 306 participants (232 male, 74 female; M_{age} = 24.03, *SD* = 7.60) from 24 teams: soccer (*n* = 138), rugby (*n* = 85), cheerleading (*n* = 29), field hockey (*n* = 26), netball (*n* = 16), and cricket (*n* = 12). Participants competed at a variety of competitive levels including amateur (*n* = 104), county (*n* = 114), university (*n* = 47), national (*n* = 29 and semi-professional (*n* = 12). The sample size in the current study was based on resource constraints as outlined by Lakens (2021). Specifically, there were geographical constraints and limited

time available to collect data in person whilst teams were together early in the competitive season.

Measures

Narcissism

We used the 16-item Narcissistic Personality Inventory (NPI-16; Ames et al., 2006) to measure narcissism. Each item consists of a narcissistic (e.g., 'I am an extraordinary person') and a non-narcissistic statement (e.g., 'I am much like everyone else'), with participants asked to choose one of the pair of statements for each item, with scores ranging from 0-16. Data collected on the NPI-16 have previously demonstrated adequate construct and predictive validity (Ames et al., 2006). To confirm the factorial validity of the NPI, we performed a Bayesian structural equation modelling (BSEM; Muthén, & Asparouhov, 2012) approach to Confirmatory Factor Analysis (CFA). Model fit was acceptable (PPP = .16, CI = -26.39, 78.64) as evidenced by a PPP value > .1 and credibility intervals encompassing zero (Gelman et al., 2014). All Mplus outputs and supplemental files for the study can be found in the Open Science Framework link (https://osf.io/u267w/).

Team Narcissism

Narcissistic group composition (NGC). NGC consisted of a vignette of a hypothetical individual (in this case someone high in narcissism). Participants rated whether target individuals fitted the description (see Gore & Widiger, 2016). The vignette provides an example of a narcissistic player (although this player was not explicitly described as a narcissist) drawing on several instances offered in the literature (Gore & Widiger, 2016; Wallace & Baumeister, 2002). We provided sex- and sport type-matched vignettes for participants (see supplemental material; https://osf.io/bgd9y/) Participants indicated the number of individuals in their team who fitted this description. We then divided this figure by the team roster size in order to standardize for team size.

This approach allows researchers to gauge individuals' perceptions of the number of teammates who possess a certain trait.[2] Furthermore, by permitting individuals to assess their environmental factors (team narcissism composition), we considered a wholly intrapersonal perspective view of team personality accounting for the level of the individual in a team. In doing so, we acknowledge the 'person' within the team, a factor which is often neglected in team personality research (Hardy et al., 2020). For completeness, we also examined the oft-used measure of team personality – the team mean score (cf. Schmidt et al., 2012) – and compared both of these approaches. The mean within-group agreement of the NGC was .99. The intraclass correlation (ICC) for the variance accounted by the grouping structure was .03

Team mean narcissism. Within each team, we used the NPI-16 scores to create a team mean narcissism score (cf. Schmidt et al., 2012).

Intragroup Conflict Scale for Sport (ICS-S)

We modified the Intragroup Conflict Scale (Behfar et al., 2011) for sport settings. This ICS-S includes relationship conflict, task conflict, and process conflict sub-scales. The ICS-S consists of 11 items: four relationship conflict items (e.g., *How much friction is there among your team members?),* three task conflict items (e.g., *How often do your team members discuss alternative viewpoints?)* and four process conflict items (e.g., *How often do members of your team argue over who should do what?).* Items were scored on a nine-point scale from 1 (*none/never*) to 9 (*a lot/always*).

Following a BSEM process to CFA, the measure revealed excellent fit (PPP = .52, CI = -36.18, 34.98) as evidenced by a PPP value close to .5 and credibility intervals encompassing zero with good symmetry around the value. Sensitivity analysis indicated 47% of parameters stayed within ± 10% of their parameter estimates. Full details on item removal, model development, model fit statistics, and inter-factor correlations can be found in the supplemental material.

Task Cohesion

To assess task cohesion, we used the positively-phrased version of the Group Environment Questionnaire (GEQ, Carron et al., 1985; Eys et al., 2007). Nine items assess task cohesion in two subscales: five items assess group integration (GI-T; e.g., *Our team is united in achieving its goals for performance*) and four items assess individual attraction to group (ATG-T; e.g., *I am happy with the playing time I get*). Responses are assessed using a nine-point Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*). To provide consistency with the other measures we also tested the factor structure of the GEQ-2 using a BSEM CFA approach and obtained an excellent fit for the two-factor task cohesion measure (PPP = .50, CI = -28.99, 29.80).

Procedure

Following institutional ethical approval, we approached teams during training or via email. We employed a cross-sectional design with participants completing the questionnaires individually and without discussing responses with other team members. Trained research assistants screened questionnaires to allow participants a second chance to complete any missing data points. All participants provided written informed consent.

Data Analysis

Using Mplus 8 (Muthén & Muthén, 1998-2017), we tested our conceptual model using Bayesian analysis, which confers a number of advantages compared to the Maximum Likelihood (ML) approach (see van de Schoot et al., 2014). One advantage of the Bayesian approach is the ability to incorporate prior beliefs into analyses. This incorporation of prior beliefs adheres to a basic epistemological scientific tenet; that knowledge is produced based on previous research findings. By including priors in the analyses, we were able to make our beliefs more explicit, which were then tempered by the current data. Following recommendations on prior belief formulation (Depaoli & van de Schoot, 2017), we

incorporated previous research (Burton et al., 2017; de Wit et al., 2012) and expert opinion into our decision making. Our choice of priors reflected small-to-moderate effect sizes (Gucciardi & Zyphur, 2016) for the path coefficients with a degree of uncertainty (Model 1). We also performed a sensitivity analysis to determine if estimates were sensitive to change (Model 1a, Model 1b, and non-informative priors). Model 1 priors were as follows: a-path priors were (.35, .03) which reflects a mean effect size of .35, with a variance of .03 for all three pathways; b-path priors were (-.35, .03) for relationship conflict and process conflict, and (.00, .03) for task conflict; finally, moderator interaction paths were (-.35, .01). Priors for Model 1a (same mean, small variance) and 1b (large mean, large priors) can be found in the supplemental material. Following recommendations from Gucciardi and Zyphur, (2016), we also include a model with non-informative priors whereby the priors reflect uncertainty in expectations around the nature of the parameter (e.g., equal probability that the parameters range between minus and plus infinity). Further, we estimated all conditional indirect effect models with Markov Chain Monte Carlo (MCMC) simulation fixed at 100,000 iterations and with two MCMC chains. We assessed model convergence using potential scale reduction (PSR) factor, with model convergence evident at PSR values between 1.0 and 1.1 (Gelman et al., 2014).

To test our hypotheses, we applied hybrid modelling and used a conditional indirect effect approach. Hybrid modelling allows for the inclusion of measurement error with variables whilst maintaining an observed variable model (Wang & Wang, 2012). This approach therefore allows researchers the compromise of modelling some measurement error, beyond a simple path analysis which treats variables as observed fixed entities with no error but does not require the large datasets that latent variable BSEM approaches require.

Given that our hypotheses reflected a conditional indirect effect model, we calculated the conditional indirect index (CIEI; Hayes, 2015), which tests whether a conditional indirect

effect is significantly different from zero. The CIEI is the product of the interaction (on the a-path) and b-path via a specific mediator. Thus, for each analysis we produced three conditional indirect indices. For details on calculations, see Hayes (2015).

Finally, due to the multilevel nature of the data (players nested within teams), we tested our model using multilevel modelling. The proposed models comprised two levels: the individual level (Level 1), namely narcissism, NGC, intragroup conflict, and task cohesion; and the team level (Level 2), namely team mean narcissism. Narcissism and intragroup conflict variables were group-mean centered to help interpret relationships at the level of the individuals rather than of the group (Enders & Tofighi, 2007)[3]. We modelled team personality conceptualizations (NGC vs. team mean narcissism) in separate analyses to allow for comparisons of results across the conditional indirect effect models.

Results

Descriptive statistics, bivariate correlations, and composite reliability estimates for all variables are displayed in Table 1.

Conditional Indirect Effects

Team mean narcissism moderator. The team mean NPI models presented model non-convergence issues (PSR > 1.1). Non-convergence issues were also evident when iterations were increased to 200,000 and reduced to one Markov chain Monte Carlo as opposed to two chains. These concerns precluded the interpretation of these posterior parameter estimates, consequently we do not report them in this section.

NGC moderator. Model convergence was reached (PSR values < 1.1) and remained stable for all models (see supplemental material). Sensitivity analysis for the conditional indirect effect models (Model 1a and 1b) revealed no change in the direction or significance of parameter estimates for all path coefficients. Thus, the choice of priors in the analysis did not influence the posterior parameter estimation in this population. CIEI estimates via each

mediator are displayed in Table 3. Individual path coefficients are found in the supplemental material. Credibility intervals that do not encompass zero are assumed to be significant effects in Bayesian estimation.

Group Integration – Task (GI-T). We obtained support for a conditional indirect effect of narcissism on GI-T via process conflict, as the conditional indirect effect index was significantly different from zero (CIEI = .04, 95% Credibility Intervals (CrI) [.01, .07]). More specifically, the indirect effect was negative at low levels of NGC (β = -.17, 95% CrI [-.33, -.06]), became less negative at moderate levels (β = -.14, 95% CrI [-.27, -.05]), and less so again at high levels of NGC (β = -.10, 95% CrI [-.21, -.03]). We did not observe a conditional indirect effect via relationship conflict (CIEI = .00, 95% CrI [-.01, .01]) or task conflict (CIEI = .00, 95% CrI [-.02, .01]).[4]

Attraction to group – Task (ATG-T). Similarly to GI-T, we obtained a conditional indirect effect index via process conflict that was significantly different from zero (CIEI = .03, 95% CrI [.01, .05]). Again, the indirect effect was negative at low levels of NGC (β= -.15, 95% CrI[-.29, -.05]), and reduced in magnitude at moderate (β= -.12, 95% CrI [-.22, -.04]), and high levels of NGC (β= -.09, 95% CrI [-.22, -.03]). We did not observe a conditional indirect effect via relationship (CIEI = .00, 95% CrI [-.004, .01]) or task conflict (CIEI = .00, 95% CrI [-.02, .01])

Sensitivity analysis for GI-T and ATG-T. Table 4 displays conditional indirect effects for both sensitivity analyses. Model 1a and 1b did not change the nature or significance of the conditional indirect index or specific indirect effects for either dependent variable. This analysis suggests the results are robust to changes in prior beliefs.

Discussion

The aim of Study 1 was to test our conceptual model of narcissism, conflict and task cohesion. Our predictions were somewhat supported, with narcissism impacting task

cohesion via process conflict alone. Specifically, when NGC was low, narcissism negatively influenced both aspects of task cohesion (GI-T, and ATG-T) via process conflict, with this negative effect subsequently weakened at high NGC. We did not find any effect for narcissism on task cohesion via relationship conflict or task conflict.

The findings from Study 1 provide initial support for our extended IPO-based model and highlight process conflict as a key mechanism underpinning narcissists' negative perceptions of task cohesion. An explanation for this effect lies in what narcissists value the most: the presentation of their ego. Whilst relationship conflict and task conflict reflect emotional and cognitive types of conflict, respectively, process conflict is concerned with issues around personal ability and competency. Consequently, when narcissists perceive process conflict, they detect this as an ego threat (Back et al., 2013). When narcissists perceive a threat to their ego, they typically respond aggressively toward the source of the criticism (Barry et al., 2006), which then leads to lower task cohesion.

Our results also supported the moderation effect of NGC. As narcissists are more likely to tolerate other narcissists' pursuit of self-enhancement, due to their perceived similarity to one another (Burton et al., 2017), any deleterious effects of narcissism on conflict and cohesion are reduced when they perceive many similar individuals in their team (high NGC). Conversely, when narcissists perceive relatively fewer like-minded individuals in their team (low NGC), there is a clear negative indirect association with task cohesion. Indeed, those high in narcissism deem those who do not share similar values to them to be social rivals (cf. Back et al., 2013). Thus, when narcissists perceive fewer like-minded individuals in their team, they experience a threat to their status and thus perceive more process conflict.

The NGC approach displayed differential effects to the team mean approach, as we observed effects for the NGC models but not for the team mean NPI approach, which

suffered model non-convergence issues. A potential reason behind model non-convergence is that the team mean NPI model contains cross-level interactions and random effects that can increase model complexity and therefore the likelihood of non-convergence (Muthén & Muthén, 1998-2017).[5] In contrast, the NGC approach allows for both individual and team variables to be modelled at Level-1, thereby removing the need for cross-level random-effects to be modelled, which results in a simpler model that is more likely to converge.

Although our findings provided some support for the hypotheses of our model, Study 1 is limited by its cross-sectional design. In an attempt to replicate our findings, in Study 2 we utilized a two-wave longitudinal design, following teams across part of a season.

Study 2

Participants

We recruited 400 participants (232 male, 168 female; M_{age} = 22.94, *SD* = 5.92) from 44 teams from a variety of team sports: netball (*n* = 99), soccer (*n* = 120), field hockey (*n* = 74), lacrosse (*n* = 32), rugby (*n* = 40), and cricket (n = 35) competing at: amateur (*n* = 106), county (*n* = 25), university (*n* = 235), and semi-professional (*n* = 34) competitive standards. Again, the sample size is justified based on limitations of resources, namely time and geographical constraints (cf. Lakens, 2021).

Measures

We employed the same measures as in Study 1. Again, both the NPI (PPP =.31, CI = -37.34, 64.16) and our task cohesion measure (PPP = .50, CI = -28.53, 29.83) displayed good factorial validity in Study 2. The ICS-S obtained excellent fit (PPP=.52, CI=-35.88, 33.95), with sensitivity analysis yielding 45% of values within ±10% of the original value. Item loadings are in Table 2. ICS-S model fit statistics and inter-factor correlations are in supplemental material. NGC had a mean within-group agreement estimate of .71 and ICC = .21

Procedure

Following institutional ethical approval, we approached teams during training or via email several weeks into pre-season which allowed for the initial development of group formation. We employed a two-wave longitudinal design with participants completing the NPI, NGC, and ICS-S at the first wave. In the second wave, approximately one month later (cf. Tekleab et al., 2009), participants completed the GEQ. We decided that administering the GEQ at a later time point allows for a better understanding of the effect of conflict on cohesion (cf. Aguinis & Bakker, 2021), whilst the one-month timeframe allowed for conflict sufficiently to impact cohesion without introducing confounding issues that may be evident later in the competitive season (e.g., competing in the later stages of a knockout competition, and the potential conflicts that arise from the situation). Participants completed all questionnaires individually and without discussing responses with other team members. Trained research assistants screened questionnaires to allow participants a second chance to complete any missing data.

Results

Descriptive statistics, bivariate correlations, and composite reliability estimates are displayed in Table 1. To retain as much replication as possible between the studies, the prior beliefs that were included in Study 1 were again utilized in Study 2.

Conditional Indirect Effects.

Our analytical strategy was, again, to test our conditional indirect effect model. As with Study 1, we tested the two different conceptualizations of team personality (team mean NPI & NGC). We used the same priors as in Study 1.

Team NPI moderator. As with Study 1, Model non-convergence issues (PSR > 1.1) were evident for the team mean NPI models. We attempted the same resolutions as in Study

1, but this did not aid convergence. Again, model non-convergence precluded our ability to interpret posterior parameter estimates for our team mean NPI models.

NGC moderator. Model convergence for the NGC moderator model was reached at around 1800 iterations. Conditional indirect effect index scores are displayed in Table 3. Path coefficients can be found in the supplemental material.

Group Integration – Task (GI-T). We replicated the findings from Study 1 for GI-T. Again, we noted a significant conditional indirect effect via process conflict alone (CIEI = .08, 95% CrI [.01, .17]). As Table 4 shows, at low levels of NGC, the indirect effect was most negative (β= -.15, 95% CrI [-.29, -.05]), but this effect was weakened at moderate levels of NGC (β= -.07, 95% CrI [-.15, -.04]). At high levels of NGC, there was no indirect effect (β=.01, 95% CrI [-.08, .10]). Similar to Study 1, we did not observe a conditional indirect effect via relationship (CIEI = .02, 95% CrI [-.01, .07]) or task conflict (CIEI = -.02, 95% CrI [-.07, .02]).

Attraction to group – Task (ATG-T). A very similar pattern of results emerged for ATG-T with a significant conditional indirect effect via process conflict only (CIEI = .06, 95% CrI [.01, .14]). The indirect effect via process conflict was again negative at low levels of NGC (β = -.12, 95% CrI [-.24, -.03]), reduced in magnitude at medium levels of NGC (β = -.05, 95% CrI [-.12, -.01]), and disappeared at high levels of NGC (β= .01, 95% CrI [-.06, .08]). Similar to Study 1, we did not observe a conditional indirect effect via relationship (CIEI = .02, 95% CrI [-.02, .06]) or task conflict (CIEI = -.02, 95% CrI [-.07, .02]).

Sensitivity analysis for GI-T and ATG-T models. Model 1a (same mean, small variance) and 1b (large mean, large priors) did not change the nature of the conditional indirect index or specific indirect effects for either dependent variable for process conflict. However, Model 1a displayed significant conditional indirect effects for both relationship

and task conflict, although these estimates did not deviate meaningfully from the main analysis (see Table 4).

Discussion

The aim of Study 2 was to replicate the findings from Study 1 using a two-wave longitudinal design. Results largely confirmed the findings from Study 1, as narcissism impacted task cohesion via process conflict alone, with NGC moderating the indirect effect. The contextual nature of the effect was also replicated – that is, in Study 1, the indirect effect diminished as NGC increased, but in Study 2 it disappeared. As such, the hypothesized indirect effect was strengthened by the longitudinal design that we employed in Study 2. Again, as in Study 1, we found non-convergence issues with our team mean narcissism moderator. The findings for our NGC moderator are consistent with the narcissistic-tolerance hypothesis and provide further evidence that the negative influence of narcissism on task cohesion is mitigated when narcissists perceive themselves to be in teams of like-minded individuals. The minor differences in findings compared to Study 1 are most likely attributable to the difference in research design. Yet, providing conceptually similar findings across studies enables us to place more confidence in the robustness and generalizability of our findings.

General Discussion

Across two studies, we tested a novel IPO framework of narcissism on perceptions of task cohesion, via intragroup conflict, conditional on NGC. Results from our Bayesian-estimated hybrid structural equation modelling were consistent across both studies and provided support for our conceptual model (Figure 1). More specifically, both studies revealed a negative indirect effect of narcissism on perceptions of task cohesion via process conflict alone; this effect weakened (Study 1) or eventually disappeared (Study 2) as the number of narcissists perceived on a team increased. To our knowledge, these data provide

the first evidence of narcissists' influence on cohesion and show that the influence of narcissistic individuals within teams is heavily dependent on (narcissistic) group composition.

A key finding across the two studies was that narcissists' perceptions of task cohesion were mediated by process conflict alone, and we found no effects via relationship conflict or task conflict. On the one hand, these findings might be considered surprising. Indeed, given narcissists' antagonistic nature (Leckelt et al., 2015) and proclivity to put forward ideas that serve the self, one might expect narcissism to impact cohesion via relationship conflict and/or task conflict. However, it seems that the role of process conflict is particularly relevant to narcissism in team settings. The disagreements around roles and responsibilities, which are a hallmark of process conflict, appear to be the mechanism that drives narcissists' negative perceptions of task cohesion. Indeed, process conflict reflects personal competency, a central component to agentic narcissism. To this end, narcissists are sensitive to their personal competency being called into question, as they are known to react aggressively to those who criticize their efforts (Barry et al., 2006) and also engage in antagonistic behaviors to protect their grandiose self (Back et al., 2013). Further, our results highlight that there are certain conditions by which narcissists' perceptions of task cohesion are more negative via process conflict, mainly when they perceive few similar like-minded individuals in their team, as such individuals may question the self-serving motives of narcissists more readily. Teams with few likeminded individuals are perceived as a threat to their ego, leading to more negative perceptions of task cohesion via process conflict. However, this negative perception of task cohesion via process conflict is attenuated when narcissists perceive (relatively) more like-minded individuals in their team. Interestingly, this finding is in accord with the narcissistic-tolerance hypothesis (Burton et al., 2017); when in groups of similar individuals, narcissists had less of a detrimental influence on group cohesion. Nonetheless, an important

subtlety across the two studies was that at no time did narcissism positively influence task cohesion, rather the negative effects were only weakened or diminished. In summary, the findings are suggestive of *only* a tolerance of individual narcissists' behaviors in teams consisting of a high number of perceived narcissists, rather than such behaviors positively impacting the group. In contrast, when narcissists perceive few similar individuals in their team, they likely perceive more social rivals, as team members (who are low in narcissism) are less tolerant of their self-enhancement pursuits and more readily question their actions and competency (Burton et al., 2017).

Although the findings relating to process conflict are clear, the effects of relationship and task conflict within our model are less so. Inspection of the constituent paths of our conceptual model leads to some complex interpretation of our results (see supplemental material). Indeed, it appears that in Study 1, the lack of significant interaction between individual narcissism and NGC for both relationship and task conflict is a contributing factor. In contrast, in Study 2 it appears the issue was attributable to non-significant b-paths of relationship and task conflict on cohesion. These inconsistencies across studies lead to difficulty in interpreting the lack of effects for narcissism on task cohesion via both relationship and task conflict types. However, one may consider that arguments around other individuals' thoughts and feelings (relationship conflict), and task-related arguments (task conflict) do not carry connotations of personal competencies as clearly as process conflict (Greer et al., 2008); thus, it appears that narcissists are less likely to be sensitive to these types of conflict.

More broadly, our investigation highlights the importance of alternative conceptualizations of team personality. We examined team personality composition by measuring individuals' perceptions of the number of people in the team who fitted a particular personality description (i.e., NGC). However, to provide some commonality with

existing literature that uses a team mean approach (cf. Schmidt et al., 2012), we also examined team mean narcissism scores as a moderator in separate analyses. From a conceptual perspective, the NGC approach enables closer alignment between the stated rationale *and* analysis of team personality, which often focuses on the number of individuals displaying a particular trait (cf. Schmidt et al., 2012). Further, the NGC approach also allows one to consider an intrapersonal perspective in team research by including individuals' perceptions of their context. Indeed, the intrapersonal perspective is ignored in the team mean conceptualization, as the mean approach simply aggregates teams' self-reported personality scores, thus does not account for individuals' perception of the team environment. In doing so, the NGC measure allows for a more nuanced understanding of team personality and its influences on individuals. From a statistical perspective, the NGC approach also has advantages over the team mean position, as it allows for a simpler approach to model testing by focusing on one level of analysis (Level-1 only); it thus overcomes model non-convergence issues that are sometimes present when examining team mean scores (as found here). The consistency of our findings across both studies lends support to the notion that this alternative conceptualization of team personality – NGC – is a relevant measure of group composition and warrants further consideration in future research. While we recognize that the team mean approach has benefits, we encourage the use of alternative conceptualizations of group personality, similar to our NGC, when theory and hypotheses relate to the *numbers* of individuals in a team that possess a certain trait.

Finally, we note that it was necessary to develop the ICS-S for this study to allow us appropriately to measure conflict in line with the conceptualization of conflict that has been successfully employed in the organizational domain (Behfar et al., 2011; Jehn, 1995, 1997). Our 11-item three-factor scale displayed excellent fit across both studies. Thus, the ICS-S

allows for a more complete comparison of intragroup conflict between sport and organizational domains than measures of conflict employed previously.

Applied Implications

In addition to their theoretical contribution, the results have potential applied implications for coaches and managers of sports teams. We suggest team managers and coaches should be mindful that intragroup conflict within teams can impact unity around the goals of the team. More specifically, process conflict, a new concept for the sports literature, appears to have particular importance to teams as conflicts around roles and responsibilities may result in negative affect among team members (Behfar et al., 2011). With these points in in mind, developing role clarity and acceptance are key in aiding effective team functioning as disagreements around roles and responsibilities appear to be detrimental to task cohesion. Secondly, our results support qualitative investigations that suggest difficult personalities (e.g., narcissists) contribute to team dysfunction (Heelis et al., 2020; Webster et al., 2017). Thus, we would suggest that developing coaches' awareness around athletes' personality (and particularly narcissism) should facilitate coaches' guidance to better resonate with athletes (Webster et al., 2017). Additionally, practitioners should consider the personality composition of the group and the associated (lack of) similarity between team members, as such differences can have a substantial bearing on team outcomes. Therefore, it is important for practitioners to consider these person-environment interactions when working in team settings.

Limitations and Future Directions

Despite multiple strengths of the current work – two studies, a two-wave longitudinal design, and Bayesian estimation – there are limitations to this research. First, it is evident that we did not measure the inputs, processes and outputs of our model at completely separate time points. Although this particular issue is less of a concern for our research question, as

personality is often conceptualized to influence thoughts, behaviors, and interactions (LePine et al., 2011), future research that tests the components of our extended IPO model at separate time points would be welcome (cf. Leckelt et al., 2015). Further to separating out variables of interest into different time points, future research would do well to factor the time of the competitive season into the research design. Given that understanding the social consequences of narcissism involves the familiarity of team members (e.g., Grijalva et al., 2019; Lynch et al., 2021) increased familiarity may influence perceptions of conflict and team members over the course of a season and have differential consequences for cohesion.

Future research in this area may also wish to investigate alternative conceptualizations of narcissism such as the self-inflated/dominant constructs for grandiose narcissism (Zhang et al., 2020), or Narcissistic Admiration/Rivalry Concept (NARC; Back et al., 2013). For example, the NARC suggests that narcissists maintain their grandiose self-image by either charismatic (Admiration) or malevolent (Rivalry) means. Analyzing these divergent pathways may conduce to differential effects regarding the association between narcissism, conflict and task cohesion compared to our unidimensional conceptualization of global narcissism. For example, rivalry components may be positively associated with conflict, whilst admiration components may have a negative or null effect. Furthermore, the influence of communal narcissism (Gebauer et al., 2012) may lead to different effects on group processes and outcomes compared to the agentic form of narcissism we utilized in the study. Communal narcissism shares the same underlying motives as agentic narcissism (i.e., a need for admiration) yet it differs in the means by which individuals achieve it. In comparison to agentic narcissists, who respond directly and aggressively to perceived threats, communal narcissists may respond using more communal methods (e.g., passive aggressiveness). Therefore, more communal types of conflict (i.e., relationship conflict) and cohesion (i.e., social cohesion) may be more salient to communal narcissists.

Beyond narcissism, whilst the ICS-S appears to have a satisfactory factor structure, future research could explore the concurrent validity against existing measures of conflict such as the Group Conflict Questionnaire (Paradis et al., 2014) and Behfar and colleagues' (2011) Intragroup Conflict Scale. It might even be possible to refine certain items, so they better reflect the specific aspects captured by the ICS-S. Furthermore, the exploration of conflict management strategies and their links to specific conflict types would be a fruitful avenue of research. The identification of the type of conflict can be seen as a first step to managing conflict, whereby certain conflict management strategies can then be implemented to mitigate any effects. Future research may wish to explore the impact of different conflict management strategies on intragroup conflict and subsequent team outcomes and also consider whether certain conflict management strategies are more or less effective for certain types (or groups) of individuals.

Summary

To summarize, utilizing Bayesian-estimated hybrid structural equation modelling we tested a novel conceptual model of the relationships between narcissism and task cohesion via intragroup conflict, with this effect moderated by NGC. Our findings suggest that narcissism impacts task cohesion via process conflict alone, with a negative influence at low levels of team narcissism, which is diminished at relatively high levels. These data provide unique and original insights into the influence of narcissism within teams and offers a platform for further work to begin to explore how individual personality and personality group composition influence teams for better or for worse.

Footnotes

[1] We conceptualize narcissism as a non-clinical personality trait that can be assessed on a continuous scale. We use terms such as *narcissis*t or *individuals high in narcissism* interchangeably to refer to those scoring highly on self-report scales such as the NPI. The conceptualization we adopt in the current study refers to grandiose narcissism in the agentic perspective, which does not include communal narcissism or vulnerable aspects of narcissism. Thus, from this point on, *narcissism* refers to grandiose, agentic narcissism.

[2] We believe this approach to be a more appropriate method to assess group composition than the oft-used team mean aggregation approach (e.g., Schmidt et al., 2012), because aggregating individual scores to create a team mean fails to consider the make-up of that team. For example, two teams with the same mean score on a particular personality trait could have substantially different composition (with one team comprising individuals scoring close to the mean, and another team comprising individuals who score substantially above and below the mean). Given that our theorizing relates to the number of individuals in a group, the NGC approach is more appropriate.

[3] We deemed group-mean centering individual's NPI scores as an appropriate standardization method to account for potential differences in individual narcissism levels across teams that may exist due to their competitive level. For reference, we also ran analyses using the grand-mean centering approach for individual narcissism, we found similar results in terms of parameter estimates and significance across both Study 1 and Study 2.

[4] We also examined a simple indirect effects model by removing the NGC variable from analysis. Results of these analyses yielded significant negative indirect effects via process conflict for both task cohesion aspects: GI-T (β = -.13, 95% CrI [-.26, -.04]), and ATG-T (β = -.11, 95% CrI [-.20, -.03]). We also examined indirect effects for Study 2, which replicated a significant negative indirect effect via process conflict alone. GI-T (β = -.07,

95% CrI [-.15, -.02]), and ATG-T (β = -.05, 95% CrI [-.12, -.01]). We did not find any evidence of indirect effects via relationship and task conflict in Studies 1 and 2.

[5]To further understand our model non-convergence issues, we combined data from Studies 1 and 2 to test whether sample size was a determining factor in model non-convergence. Results of these analyses again displayed model non-convergence for task cohesion types (Lowest PSR values for GI-T = 2.7; and ATG-T = 1.8). Thus, we have confidence in attributing model non-convergence issues to model complexity rather than sample size deficiencies.

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Figure Captions

Figure 1. Overview of conceptual model tested in Study 1 and 2.

Table 1

Means, SDs, bivariate correlations, and composite reliabilities for Study 1 & 2

	Study 1			Study 2										
	M	***SD***	**Alpha**	***M***	***SD***	**Alpha**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. NPI	4.18	3.12	.76	4.67	3.23	.76	-	.75**	.20**	.33**	-.48**	.21**	-.20**	-.22*
2. Team NPI	4.16	1.12	.76	4.65	2.41	.76	.41**	-	.21**	.40**	-.65**	.21	-.21**	-.23**
3. NGC	.07	.08	N/A	.09	.11	N/A	.13	.23**	-	.32**	-.10**	.29**	-.03	.04
4. RC	3.24	1.59	.91	3.02	1.59	.91	.21**	.14	.21**	-	-.38**	.68**	-.26**	-.15**
5. TC	4.50	1.52	.82	4.52	1.60	.82	.27**	.35**	.23**	.52**	-	-.06	.19**	.15
6. PC	3.87	1.60	.88	3.37	1.50	.88	.32**	.30**	.30**	.78**	.65**	-	-.39**	-.24**
7. GIT	7.07	1.19	.86	7.12	1.14	.86	-.07	-.00	-.07	-.36**	.-1	-.30**	-	.73**
8. ATGT	7.14	1.29	.86	7.14	1.31	.86	-.08	-.13**	-.11	-.18**	-.06	-.27**	.62**	-

Note: Study 1 correlations are displayed on lower position of matrix and Study 2 bivariate correlations are displayed on the upper side of the matrix.

NPI – Narcissistic Personality Inventory NGC – Narcissistic Group Composition RC – Relationship Conflict TC – Task Conflict GIT – Group integration – Task

ATGT – Attraction to group – Task

* one-tailed significance ** two-tailed significance.

Table 2

Item factor loadings including 95% credibility intervals for relationship, task, and process conflict

	Study 1			Study 2		
Item	**Relationship**	**Task**	**Process**	**Relationship**	**Task**	**Process**
How much friction is there amongst your team?	**.85 [.62, 1.07]**	.02 [-.15, .17]	-.02 [-.21, .167]	**.80 [.53, 1.02]**	-.02 [-.19, .14]	-.03 [-.23, .16]
How much personality conflict is evident in your team?	**.80 [.58, 1.04]**	.04[-.13, .20]	.04 [-.16, .23]	**.79 [.55, 1.01]**	.02 [-.15, .18]	.02 [-.18, .22]
How much tension is there among members in your team?	**.88 [.66, 1.10]**	-.04 [-.20, .12]	-.01 [-.20, .17]	**.87 [.65, 1.07]**	-.04 [-.20, .11]	.02 [-.18, .22]
How much emotional conflict is there among your team members?	**.85 [.62, 1.07]**	-.01 [-.17, .16]	.02 [-.19, .20]	**.78 [.54, 1.00]**	.05 [-.12, .21]	.02 [-.18, .21]
To what extent does your team argue the pros and cons of different opinions?	.02[-.17, .20]	**.74 [.42, 1.01]**	.00 [-.19, .19]	.02 [-.16, .20]	**.75 [.43, .98]**	.04 [-.14, .22]
How often do your team members discuss alternative viewpoints?	-.05 [-.23, .13]	**.82 [.52, 1.06]**	-.03 [-.22, .16]	-.04 [-.21, .13]	**.86 [.57, 1.03]**	-.07 [-.25, .10]
How frequently do members of your team engage in debate about different opinions or ideas?	.05 [-.14, .23]	**.79 [.54, 1.02]**	.04 [-.15, .23]	.03 [-.15, .20]	**.73 [.40, .95]**	.05 [-.13, .23]
To what extent do you disagree about the way to do things in your team?	.03 [.18, .23]	-.01 [-.20, .17]	**.80 [.52, 1.06]**	.02 [-.18, .22]	-.05 [-.23, .14]	**.74 [.45, .99]**
How often do members of your team disagree about who should do what?	.02 [-.19, .21]	.03 [-.15, .22]	**.79 [.52, 1.05]**	.01 [-.20, .21]	.09 [-.10, .26]	**.73 [.43, .99]**
To what extent is there tensions in your team caused by not completing their roles?	.02 [-.19, .21]	-.01 [-.20, .16]	**.81 [.54, 1.07]**	.01 [-.19, .20]	-.016 [-.19, .15]	**.79 [.52, 1.03]**
How much tension is there in your team caused by members not being ‘mentally there’ during practice?	-.03 [.22, .16]	.01 [-.17, .19]	**.80 [.52, 1.06]**	-.01 [-.21, .19]	-.01 [-.18, .18]	**.63 [.28, .93]**

Table 3

Conditional indirect effect indices via each conflict type.

	Relationship	**Task**	**Process**
Study 1		**Model 1**	
GI-T	.00 [-.01, .01]	.00 [-.02, .01]	**.04 [.01, .07]**
ATG-T	.00 [-.004, .01]	.00 [-.02, 0.1]	**.03 [.01, .05]**
Study 2			
GI-T	.02 [-.01, .07]	-.02 [-.07, .02]	**.08 [.01, .17]**
ATG-T	.02 [-.02, .06]	-.02 [-.07, .02]	**.06 [.01, .14]**
Study 1		**Model 1a**	
GI-T	.00 [-.01, .02]	.00 [-.01, .01]	**.03 [.01, .06]**
ATG-T	.00 [-.003, .01]	.00 [-.01, .01]	**.02 [.01, .04]**
Study 2			
GI-T	.05 [.01, .10]	-.06 [-.12,-.02]	**.09 [.04, .16]**
ATG-T	**.04 [.01, .09]**	**-.06 [-.11, -.02]**	**.08 [.03, .14]**
Study 1		**Model 1b**	
GI-T	.00 [-.01, .01]	.00 [-.02, .01]	**.04 [.01, .11]**
ATG-T	.00 [-.01, .01]	.00 [-.01, .01]	**.03 [.01, .10]**
Study 2			
GI-T	.00 [-.05, .05]	-.01 [-.09, .05]	**.10 [.004, .22]**
ATG-T	.00 [-.05, .05]	-.01 [-.07, .05]	**.08 [.01, .19]**
Study 1		**Non-informative priors**	
GI-T	.00 [-.01, .01]	.00 [-.02, .02]	**.04 [.01, .11]**
ATG-T	.00 [-.01, .01]	.00 [-.02, .01]	**.03 [.01, .06]**
Study 2			
GI-T	-.02 [-.09, .02]	-.11 [-.28, .00]	.12 [-.02, .28]
ATG-T	-.02 [-.09, .02]	-.08 [-.22, .01]	.09 [-.004, .23]

Note Model 1- small-moderate effect priors; Model 1a - small-moderate effect priors with small variance; Model 1b – large effect size priors and large variance.

GI-T – Group integration – Task; ATG-T – Attraction to group – Task

95% credibility intervals contained in brackets.

Bold parameters denote estimates which do not encompass zero

Table 4

Specific conditional indirect through process conflict at different levels of NGC.

	Low NGC	Moderate NGC	High NGC
Study 1		**Model 1**	
GI-T	**-.17 [-.33, -.06]**	**-.14 [-.27, -.05]**	**-.10 [-.21, -.03]**
ATG-T	**-.15 [-.26, -.05]**	**-.12 [-.22, -.04]**	**-.09 [-.22, -.03]**
Study 2			
GI-T	**-.15 [-.29, -.05]**	**-.07 [-.15, -.02]**	.01 [-.08, .10]
ATG-T	**-.12 [-.24, -.03]**	**-.05 [-.12, -.01]**	.01 [-.06, .08]
Study 1		**Model 1a**	
GI-T	**-.16 [-.29, -.07]**	**-.13 [-.22, -.06]**	**-.10 [-.17, -.04]**
ATG-T	**-.10 [-.18, -.03]**	**-.08 [-.14, -.03]**	**-.06 [-.11, -.02]**
Study 2			
GI-T	**-.17 [-.27, -.08]**	**-.08 [-.14, -.03]**	.01 [-.05, .08]
ATG-T	**-.14 [-.24, -.06]**	**-.06 [-.12, -.03]**	.01 [-.04, .07]
Study 1		**Model 1b**	
GI-T	**-.33 [-.86, -.10]**	**-.29 [-.77, -.08]**	**-.24 [-.68, -.06]**
ATG-T	**-.20 [-.39, -.07]**	**-.17 [-.35, -.06]**	**-.14 [-.31, -.04]**
Study 2			
GI-T	**-.19 [-.38, -.06]**	**-.09 [-.20, -.01]**	.01 [-.05, .05]
ATG-T	**-.15 [-.31, -.03]**	**-.07 [-.16, -.01]**	.01 [-.08, .11]
Study 1		**Non-informative priors**	
GI-T	**-.24 [-.77, -.05]**	**-.21 [-.69, -.04]**	**-.17 [-.61, -.03]**
ATG-T	**-.20 [-.42, -.08]**	**-.17 [-.37, -.06]**	**-.14 [-.33, -.05]**
Study 2			
GI-T	**-.22 [-.46, -.04]**	**-.11 [-.24, -.002]**	.01 [-.09, .02]
ATG-T	**-.17 [-.38, -.03]**	**-.08 [-.19, -.002]**	.01 [-.11, .15]

Note Model 1- small-moderate effect priors; Model 1a - small-moderate effect priors with small variance; Model 1b – large effect size priors and large variance.

GI-T – Group integration – Task; ATG-T – Attraction to group – Task

95% credibility intervals contained in brackets.

Bold parameters denote estimates which do not encompass zero